

ERICSSON 

TELEFAX

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A method for attenuating an interferer of substantially known spectrum in a communication signal which has been transmitted through a transmission channel and processed through a signal-processing receiver chain, said method comprising:

generating, from the substantially known spectrum and independently of the communication signal, at least one image representative of a replica of the interferer after processing through the signal-processing receiver chain;

subtracting the image representative from the processed communication signal to produce a subtraction signal;

calculating a quality-indicative parameter of the processed communication signal;

computing said quality-indicative parameter for the subtraction signal; and

selecting, in relation to the quality-indicative parameter, one of the processed communication signal and subtraction signal for further processing through the signal-processing receiver chain.

2. (Currently amended) A method for attenuating an interferer as recited in claim 1, wherein:

generating at least one image representative comprises producing, from the substantially known spectrum and independently of the communication signal, a plurality of different images each representative of a replica of the interferer after processing through the signal-processing receiver chain;

09/662,740

8400 Decarie Boul.
Montreal, QC H4P 2N2 CANADA

Tel: 1-514-345-7900 ext. 6467
Fax: 1-514-345-7929

ERICSSON **TELEFAX**

said subtracting comprises, for each image of the plurality of different images, subtracting the image representative from the processed communication signal to produce a corresponding subtraction signal;

said computing comprises computing said quality-indicative parameter for every subtraction signal; and

said selection comprises selecting, in relation to the quality-indicative parameter, one of the processed communication signal and subtraction signals for further processing through the signal-processing receiver chain.

3. (Currently amended) A method for attenuating an interferer as recited in claim 1, wherein:

generating at least one image representative comprises feedback controlling, in relation to the quality-indicative parameter of the subtraction signal, at least one feature of the image to improve said quality-indicative parameter of the subtraction signal.

4. (Currently amended) A method for attenuating an interferer as recited in claim 3, wherein said at least one feature is an amplitude of the image representative.

5. (Currently amended) A method for attenuating an interferer as recited in claim 3, wherein said at least one feature is a phase of the image representative.

6. (Currently amended) A method for attenuating an interferer as recited in claim 1, wherein generating at least one image representative comprises:

generating said replica of the interferer; and
processing said replica through transfer functions reproducing the signal-processing receiver chain to produce a processed interferer replica.

09/662,740

8400 Decarie Boul.
Montreal, QC H4P 2N2 CANADA

Tel: 1-514-345-7900 ext. 6467
Fax: 1-514-345-7929

ERICSSON **TELEFAX**

7. (Currently amended) A method for attenuating an interferer as recited in claim 6, wherein generating at least one image representative further comprises amplifying the processed interferer replica to produce the image.

8. (Previously amended) A method for attenuating an interferer as recited in claim 1, wherein generating at least one image representative of a replica of the interferer after processing through the signal-processing receiver chain comprises generating a silent replica of the interferer including no voice or data component.

9. (Currently amended) A method for attenuating an interferer as recited in claim 1, wherein:

- the interferer is a narrowband interferer;
- the communication signal is a spread spectrum signal;
- the signal-processing receiver chain incorporates a despreading scheme whose function is to convert the spread spectrum signal to a despread signal; and
- generating at least one image representative comprises:
- producing a replica of the narrowband interferer;
- processing said replica through transfer functions reproducing the signal-processing receiver chain including the despreading scheme.

10. (Previously amended) A method for attenuating an interferer as recited in claim 9, wherein the narrowband interferer is an AMPS interferer, and the spread spectrum signal is a CDMA spread spectrum signal.

11. (Currently amended) A method for attenuating an interferer as recited in claim 10, wherein the quality-indicative parameter are BER Bit Error Rate (BER) measurements of the despread signal and subtraction signal.

09/662,740

8400 Decarie Boul.
Montreal, QC H4P 2N2 CANADA

Tel: 1-514-345-7900 ext. 6467
Fax: 1-514-345-7929

ERICSSON **TELEFAX**

12. (Original) A method for attenuating an interferer as recited in claim 10, wherein producing a replica of the AMPS interferer comprises producing a silent replica of the AMPS interferer including no voice or data component.

13. (Previously amended) A method for attenuating an interferer as recited in claim 6, comprising both generating said replica of the interferer and processing said replica through transfer functions are conducted through a digital implementation.

14. (Previously amended) A method for attenuating an interferer as recited in claim 13, wherein said digital implementation is selected from a group consisting of software, firmware and ASIC.

15. (Currently amended) A method for attenuating an interferer from a communication signal which has been transmitted through a transmission channel and processed through a signal-processing receiver chain, said method comprising:

generating a plurality of images of the interferer having different features;
for each interferer image, subtracting said interferer image from the processed communication signal to produce a corresponding subtraction signal;
calculating a quality-indicative parameter of the processed communication signal;

computing said quality-indicative parameter for every each subtraction signal; and

selecting, in relation to the quality-indicative parameter, one of the processed communication signal and subtraction signals for further processing through the receiver.

16-17. (Canceled)

09/662,740

8400 Decarie Boul.
Montreal, QC H4P 2N2 CANADA

Tel: 1-514-345-7900 ext. 6467
Fax: 1-514-345-7929

ERICSSON **TELEFAX**

18. (Currently amended) A method for attenuating an interferer as recited in claim 15, wherein:

- the interferer is selected from a group consisting of a narrowband AMPS interferer, a TDMA interferer and a GSM interferer;
- the communication signal is a CDMA spread spectrum signal;
- the signal-processing receiver chain incorporates a despreading scheme whose function is to convert the CDMA spread spectrum signal to a despread baseband signal; and
- the quality-indicative parameter are BER Bit Error Rate (BER) measurements of the despread baseband signal and subtraction signals.

19. (Currently amended) A method for attenuating an interferer as recited in claim 15, wherein generating one of the plurality of images comprises feedback controlling, in relation to the quality-indicative parameter of one of the subtraction signals corresponding to the plurality of images, ~~the features of the plurality of images~~ a feature of said image in view of improving the quality-indicative parameter of every said subtraction signal.

20. (Currently amended) A method for attenuating an interferer as recited in claim 19, wherein feedback controlling of the feature of said one image comprises controlling the feature of said one image also in relation to said selection selecting to improve the quality-indicative parameter of every said subtraction signal until said subtraction signal is selected for further processing through the signal-processing receiver chain.

21. (Currently amended) A method for attenuating an interferer from a communication signal which has been transmitted through a transmission channel and processed through a signal-processing receiver chain, said method comprising:

- generating an image of the interferer;

09/662,740

8400 Decarie Bou.
Montreal, QC H4P 2N2 CANADA

Tel: 1-514-345-7900 ext. 6467
Fax: 1-514-345-7929

ERICSSON **TELEFAX**

subtracting the interferer image from the processed communication signal to produce a subtraction signal;

calculating a quality-indicative parameter of the processed communication signal;

computing said quality-indicative parameter for the subtraction signal; and

selecting, in relation to the quality-indicative parameter, one of the processed communication signal and subtraction signal for further processing through the signal-processing receiver chain;

wherein generating an image of the interferer comprises feedback controlling, in relation to the quality-indicative parameter of the subtraction signal, at least one feature of the interferer image in view of improving said quality-indicative parameter of the subtraction signal.

22. (Currently amended) A method for attenuating an interferer as recited in claim 21, wherein feedback controlling of at least one feature of the interferer image comprises controlling said at least one feature also in relation to said selecting to improve the quality-indicative parameter of the subtraction signal until said subtraction signal is selected for further processing through the signal-processing receiver chain.

23. (Currently amended) A method for attenuating an interferer as recited in claim 21, wherein:

- the interferer is selected from a group consisting of: a narrowband AMPS interferer, a TDMA interferer and a GSM interferer;
- the communication signal is a CDMA spread spectrum signal;
- the signal-processing receiver chain incorporates a despreading scheme whose function is to convert the CDMA spread spectrum signal to a despread baseband signal; and
- the quality-indicative parameter are BER Bit Error Rate (BER) measurements of the despread baseband signal and subtraction signal.

09/662,740

8400 Decarie Boul.
Montreal, QC H4P 2N2 CANADA

Tel: 1-514-345-7900 ext. 6467
Fax: 1-514-345-7929

ERICSSON 

TELEFAX

24. (Currently amended) A device for attenuating an interferer of substantially known spectrum in a communication signal which has been transmitted through a transmission channel and processed through a signal-processing receiver chain, said device comprising:

a generator of at least one image representative of a replica of the interferer after processing through the signal-processing receiver chain, said generator having image generating means responsive to the substantially known spectrum of the interferer but having no connection to the communication signal;

a subtractor of the image representative from the processed communication signal to produce a subtraction signal;

a first calculator of a quality-indicative parameter of the processed communication signal;

a second calculator of said quality-indicative parameter for the subtraction signal; and

a selector of one of the processed communication signal and subtraction signal in relation to the quality-indicative parameter, for further processing through the signal-processing receiver chain.

25. (Canceled)

26. (Currently amended) A device for attenuating an interferer as recited in claim 24, wherein the image generating means further comprises an amplifier for applying a gain to said the at least one image representative of a replica of the interferer and to thereby produce the image.

27. (Original) A device for attenuating an interferer as recited in claim 24, wherein said replica is a silent replica of the interferer including no voice or data component.

09/662,740

8400 Decarie Bou.
Montreal, QC H4P 2N2 CANADA

Tel: 1-514-345-7900 ext. 6467
Fax: 1-514-345-7929

ERICSSON **TELEFAX**

28. (Previously amended) A device for attenuating an interferer as recited in claim 24, wherein:

- the interferer is a narrowband interferer;
- the communication signal is a spread spectrum signal;
- the signal-processing receiver chain incorporates a despreading scheme whose function is to convert the spread spectrum signal to a despread signal; and
- the generator comprises:
 - a sub-generator of a replica of the narrowband interferer.

29. (Previously amended) A device for attenuating an interferer as recited in claim 28, wherein the narrowband interferer is an AMPS interferer, and the spread spectrum signal is an CDMA spread spectrum signal.

30. (Original) A device for attenuating an interferer as recited in claim 29, wherein the first and second calculators comprises respective BER measurement means.

31. (Canceled)

32. (Previously amended) A device for attenuating an interferer as recited in claim 28, wherein said sub-generator comprises a digital implementation.

33. (Previously amended) A device for attenuating an interferer as recited in claim 32, wherein said digital implementation is selected from a group consisting of: software, firmware and ASIC.

34. (Currently amended) A device for attenuating an interferer of substantially known spectrum in a communication signal which has been transmitted through a transmission channel and processed through a signal-processing receiver chain, said device comprising:

09/662,740

8400 Decarie Boul.
Montreal, QC H4P 2N2 CANADA

Tel: 1-514-345-7900 ext. 6467
Fax: 1-514-345-7929

ERICSSON **TELEFAX**

means for generating, in relation to the substantially known spectrum but independently of the communication signal, at least one image representative of a replica of the interferer after processing through the signal-processing receiver chain;

means for subtracting the image representative from the processed communication signal to produce a subtraction signal;

means for calculating a quality-indicative parameter of the processed communication signal;

means for calculating said quality-indicative parameter for the subtraction signal; and

means for selecting, in relation to the quality-indicative parameter, one of the processed communication signal and subtraction signal for further processing through the signal-processing receiver chain.

35. (Previously amended) A device for attenuating an interferer from a communication signal which has been transmitted through a transmission channel and processed through a signal-processing receiver chain, said device comprising:

a generator of a plurality of images of the interferer having different features being the phase and the amplitude of the images;

for each interferer image, a subtractor of said interferer image from the processed communication signal to produce a corresponding subtraction signal;

a first calculator of a quality-indicative parameter of the processed communication signal;

a second calculator of said quality-indicative parameter for every subtraction signal; and

a selector of one of the processed communication signal and subtraction signals in relation to the quality-indicative parameter, for further processing through the signal-processing receiver chain.

36-37. (Canceled)

09/662,740

8400 Decarie Boul.
Montreal, QC H4P 2N2 CANADA

Tel: 1-514-345-7900 ext. 6467
Fax: 1-514-345-7929

ERICSSON **TELEFAX**

38. (Previously amended) A device for attenuating an interferer as recited in claim 35, wherein:

- the interferer is selected from a group consisting of a narrowband AMPS interferer, a TDMA interferer and a GSM interferer;
- the communication signal is a CDMA spread spectrum signal;
- the signal-processing receiver chain incorporates a despreading scheme whose function is to convert the CDMA spread spectrum signal to a despread baseband signal; and
- the first and second calculators comprise respective BER measurement modules which, in operation, supply BER measurements of the despread baseband signal and subtraction signal.

39. (Currently amended) A device for attenuating an interferer as recited in claim 35, wherein said generator comprises a feedback control of ~~the features a feature of one of the plurality of images in relation to the quality-indicative parameter of one of the subtraction signals corresponding the plurality of images, in view of improving the quality-indicative parameter of every the subtraction signals.~~

40. (Original) A device for attenuating an interferer as recited in claim 39, wherein said feedback control is also responsive to the selection by said selector.

41. (Previously amended) A device for attenuating an interferer from a communication signal which has been transmitted through a transmission channel and processed through a signal-processing receiver chain, said device comprising:

means for generating a plurality of images of the interferer having different features;

09/662,740

8400 Decarie Boul.
Montreal, QC H4P 2N2 CANADA

Tel: 1-514-345-7900 ext. 6467
Fax: 1-514-345-7929

ERICSSON 

TELEFAX

for each interferer image, means for subtracting said interferer image from the processed communication signal to produce a corresponding subtraction signal;

means for calculating a quality-indicative parameter of the processed communication signal;

means for computing said quality-indicative parameter for every subtraction signal; and

means for selecting, in relation to the quality-indicative parameter, one of the processed communication signal and subtraction signals for further processing through the signal-processing receiver chain.

42. (Currently amended) A device for attenuating an interferer from a communication signal which has been transmitted through a transmission channel and processed through a signal-processing receiver chain, said device comprising:

a generator of an image of the interferer;

a subtractor of the interferer image from the processed communication signal to produce a subtraction signal;

a first calculator of a quality-indicative parameter of the processed communication signal;

a second calculator of said quality-indicative parameter for the subtraction signal; and

a selector of one of the processed communication signal and subtraction signal in relation to the quality-indicative parameter, for further processing through the receiver;

wherein the generator comprises a feedback control of at least one feature of the interferer image in relation to the quality-indicative parameter of the subtraction signal, in view of improving said quality-indicative parameter of the subtraction signal.

09/662,740

8400 Decarie Boul.
Montreal, QC H4P 2N2 CANADA

Tel: 1-514-345-7900 ext. 6467
Fax: 1-514-345-7929

ERICSSON **TELEFAX**

43. (Original) A device for attenuating an interferer as recited in claim 42, wherein said feedback control is responsive to the selection by said selector.

44. (Previously amended) A device for attenuating an interferer as recited in claim 42, wherein:

- the interferer is selected from a group consisting of a narrowband AMPS interferer, a TDMA interferer and a GSM interferer;
- the communication signal is a CDMA spread spectrum signal;
- the signal-processing receiver chain incorporates a despreading scheme whose function is to convert the CDMA spread spectrum signal to a despread baseband signal; and
- the first and second calculators comprise respective BER measurement modules.

45. (Currently amended) A device for attenuating an interferer from a communication signal which has been transmitted through a transmission channel and processed through a signal-processing receiver chain, said device comprising:

- means for generating an image of the interferer;
- means for subtracting the interferer image from the processed communication signal to produce a subtraction signal;
- means for calculating a quality-indicative parameter of the processed communication signal;
- means for calculating said quality-indicative parameter for the subtraction signal; and
- means for selecting, in relation to the quality-indicative parameter, one of the processed communication signal and subtraction signal for further processing through the receiver;

wherein the means for generating an image interferer of the interferer comprises means for feedback controlling, in relation to the quality-indicative parameter of the

09/662,740

8400 Decarie Boul.
Montreal, QC H4P 2N2 CANADA

Tel: 1-514-345-7900 ext. 6467
Fax: 1-514-345-7929

ERICSSON **TELEFAX**

subtraction signal, at least one feature of the image in view of improving said quality-indicative parameter of the subtraction signal.

46-49. (Canceled)

09/662,740

8400 Decarie Boul.
Montreal, QC H4P 2N2 CANADA

Tel: 1-514-345-7900 ext. 6467
Fax: 1-514-345-7929